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| 10/766,554      | 08/13/2004  | Carles Flotats       | 200206527-1         | 3096             |

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EXAMINER


LEBRON, JANNELLE M

| ART UNIT | PAPER NUMBER |
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2861

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                       |                                       |   |
|------------------------------|---------------------------------------|---------------------------------------|---|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/766,554  | <b>Applicant(s)</b><br>FLOTATS ET AL. |   |
|                              | <b>Examiner</b><br>Jannelle M. Lebron | <b>Art Unit</b><br>2861               |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11, 13-18, 20-24, 26-29 and 31-35 is/are rejected.
- 7) ☐ Claim(s) 6, 12, 19, 25, 30, 36 and 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5 and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Otsuki et al. (US Patent 6,527,360).

3. Regarding claim 1, Otsuki et al. discloses “a media-positioning sensor assembly comprising:

a mechanism [31 in figure 4] to move back and forth over media [P] along a first axis [main scanning direction in figure 6], the media [P] advancing past the mechanism [31] along a second axis [sub-scanning direction in figure 6] perpendicular to the first axis; and,

a media-positioning sensor [33 in figure 6] situated on the mechanism [31] to detect positioning of the media [P] relative to the mechanism [31] along at least one the first axis and the second axis [column 6, lines 43-49], including to detect relative movement of the media along at least one of the first and the second axis [the sensor confirms the relative movement of the paper in the sub-scanning direction (column 7, lines 23-27) by detecting the edges of the paper].”

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4. Regarding claim 2, Otsuki et al. discloses a media-positioning sensor “further comprising a shaft [34 in figure 4] on which the mechanism [31] is slidably attached, such that the mechanism moves back and forth on the shaft and over the media along the first axis [as seen in figure 4]”.

5. Regarding claim 3, Otsuki et al. discloses a media-positioning sensor “wherein the mechanism [31] comprises a fluid-ejection mechanism [28 in figure 4] having situated thereon a plurality of fluid- ejection devices [Nz in figure 6], such that the media-positioning sensor [33] is situated on the mechanism relative to the plurality of fluid-ejection devices [as seen in figure 6].”

6. Regarding claim 4, Otsuki et al. discloses a media-positioning sensor “wherein the fluid-ejection mechanism [28] is an inkjet-printing mechanism, and the plurality of fluid-ejection devices is a plurality of inkjet pens [column 6, lines 30-32; column 8, lines 63-64].”

7. Regarding claim 5, Otsuki et al. discloses a media-positioning sensor “wherein the mechanism moves back and forth over the media along the first axis between a first end position and a second end position, the media-positioning sensor remaining over the media when the mechanism is at the first end position and when the mechanism is at the second end position.”

8. Regarding claim 7, Otsuki et al. discloses a media-positioning sensor “wherein the media- positioning sensor is an optical sensor [column 10, lines 19-21, 29-31].”

9. Regarding claim 8 and 9, Otsuki et al. discloses a media-positioning sensor that generates a electrical, or firing, signal sent to the controller when it detects the presence

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of media in a specific point so that the printhead starts printing images [column 6, lines 46-49; column 13, lines 11-13].

10. Regarding claim 10, Otsuki et al. discloses a media-positioning sensor "wherein the media- positioning sensor comprises: an optical sensing mechanism to capture images of the media; an illumination mechanism to illuminate the media as the at least one optical sensing mechanism captures images of the media; and, a controlling mechanism to control the at least one optical sensing mechanism and the illumination mechanism [column 10, lines 19-31]."

11. Regarding claim 11, Otsuki et al. discloses a media-positioning sensor "wherein the media- positioning sensor captures images of inherent physical aspects of the media, the images utilized to determine positioning of the media relative to the mechanism. The sensor detects the edge and margins of the paper."

12. Claims 16-18, 20, 22, and 26-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato (US 2004/0108474).

13. Regarding claim 16, Kato discloses "an image-forming device [3] comprising:  
a fluid-ejection mechanism [10] to move back and forth over media along a first axis and eject fluid on the media [paragraphs 0036 and 0042];

a media-advance mechanism to advance the media along a second axis perpendicular to the first axis [paragraph 0036]; and,

a media-positioning sensor [68] moving in concert with the fluid-ejection mechanism to detect positioning of the media relative to the fluid-ejection mechanism along at least one of the first axis and the second axis [paragraph 0048], including to

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detecting relative movement of the media along both the first axis and the second axis [the sensor confirms the relative movement of the paper in both directions (paragraph 0073) by detecting the edges of the paper; the sensor ceasing to detect the presence of paper indicates it's movement]."

14. Regarding claim 17, Kato discloses an image-forming device "further comprising a controller to control advancement of the media by the media-advance mechanism and movement over the media by the fluid-ejection mechanism based on positioning of the media relative to the fluid-ejection mechanism as detected by the media- positioning sensor [paragraph 0052]."

15. Regarding claim 18, Kato discloses an image-forming device "wherein the media-positioning sensor is to transmit signals to the controller at a resolution upon detecting motion of the media relative to the media-advance mechanism along at least one of the first axis and the second axis [paragraph 0054]."

16. Regarding claim 20, Kato discloses an image-forming device "wherein upon a beginning of the media passing under the media-advance mechanism relative to the second axis, the media-advance mechanism moves back and forth over the media along the first axis, such that the media-positioning sensor is able to detect margins of the media with respect to the first axis [paragraph 0048]."

17. Regarding claim 22, Kato discloses an image-forming device "wherein the media-positioning sensor is an optical sensor [paragraph 0048]."

18. Regarding claim 27, Kato discloses "an image-forming device comprising:

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a fluid-ejection mechanism [10] to move back and forth over media along a first axis and eject fluid on the media [paragraphs 0036 and 0042];

a media-advance mechanism [14] to advance the media along a second axis perpendicular to the first axis [paragraph 0036]; and,

means [68] for detecting positioning of the media relative to the fluid-ejection mechanism along both the first axis and the second axis [paragraph 0073], including for detecting relative movement of the media along both the first axis and the second axis [the sensor confirms the relative movement of the paper in both directions (paragraph 0073) by detecting the edges of the paper; the sensor ceasing to detect the presence of paper indicates it's movement].”

19. Regarding claims 26 and 28, Kato discloses an image-forming device “wherein the fluid-ejection mechanism is an inkjet-printing mechanism, such that the image-forming device is an inkjet printer [paragraph 0033].”

### ***Claim Rejections - 35 USC § 103***

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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21. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

22. Claims 13, 29 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki et al. (US Patent 6,527,360) in view of Kato (US 2004/0108474).

23. Regarding claims 13, 32 and 33 Otsuki et al. meets the claimed limitations as set forth above except "the media-positioning sensor is able to detect margins of the media with respect to the first axis" and "moving the mechanism over the media in a third direction opposite to the first direction; and, sensing positioning of the media relative to the mechanism in the third direction using the media-positioning sensor situated on the mechanism."

Kato discloses a media sensor that moves back and forth over the media "for detecting the leading edge, trailing edge, and widthwise edge of the paper [paragraph 0048]." It would have been obvious to one of ordinary skill in the art at the time of the invention provide a media sensor that detects the media edges while moving back and forth relative to the paper. One would have been motivated to modify Otsuki to improve printing accuracy and quality as taught by Kato.

24. Regarding claim 29, Otsuki et al. discloses "a method comprising:



moving a mechanism [31] over media [P] in a first direction;  
sensing positioning of the media relative to the mechanism in the first direction using a media-positioning sensor [33] situated on the mechanism as the mechanism moves over the media in the first direction [main scanning direction in figure 6];  
advancing the media in a second direction perpendicular to the first direction [sub-scanning direction in figure 6]; and,  
sensing positioning of the media relative to the mechanism in the second direction using the media-positioning sensor situated on the mechanism [column 13, lines 34-38, 52-59], including for detecting relative movement of the media in the second direction [the sensor confirms the relative movement of the paper in the sub-scanning direction (column 7, lines 23-27) by detecting the leading and trailing edges of the paper].”

Thus, Otsuki et al. meets the claimed limitations as set forth above except “including sensing relative movement of the media in the first direction.”

Kato discloses means for detecting positioning of the media relative to the fluid ejection mechanism along both the first and the second axis [paragraph 0073]. It would have been obvious to one of ordinary skill in the art at the time of the invention provide a media sensor that detects the media edges while moving back and forth relative to the paper. One would have been motivated to modify Otsuki to improve printing accuracy and quality as taught by Kato.

25. Regarding claim 34, Otsuki et al. discloses a method “further comprising ejecting fluid onto the media by a fluid-ejection mechanism [28 in figure 4] situated on the

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mechanism [31] as the mechanism moves over the media in the first direction [main scanning direction].”

26. Regarding claim 35, Otsuki et al. discloses a method “wherein sensing positioning of the media comprises transmitting signals at a resolution upon detecting motion of the media relative to the mechanism [column 13, lines 11-13].” The media sensor transmits signals to the controller when it detects positioning of the media.

27. Claim 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (US 2004/0108474) in view of Otsuki et al. (US Patent 6,527,360).

28. Kato meets the claimed limitations as set forth above except “wherein the media-positioning sensor is situated on the fluid-ejection mechanism” and “wherein the media-positioning sensor situated between the first and the last fluid-ejection devices.”

Otsuki et al. discloses a media sensor positioned in the printhead between the first and last nozzle that detects the presence of printing paper [column 6, lines 43-49; column 9, line 65 – column 10, line 3; figure 6]. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a media sensor positioned in the fluid ejection mechanism between the nozzles instead of having two separate parts. One would have been motivated to modify Kato to improve efficiency and printing quality as taught by Otsuki.

29. Claims 14 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki et al. (US Patent 6,527,360) in view of Campbell et al. (US 2004/0119769).

30. Otsuki et al. meets the claimed limitations as set forth above except “wherein upon a beginning of the media passing under the mechanism relative to the second

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axis, the mechanism moves to a predetermined location over the media along the first axis for the media-positioning sensor to detect a pattern imprinted on the media at the predetermined location.” The printing mechanism in Otsuki et al. moves to a predetermined location over the media along the first axis [column 12, line 66 – column 13, line 6], but fails to detect a pattern imprinted on the media.

31. Campbell et al. discloses a media sensor mounted on the printhead carrier used to scan a pattern printed on the print media sheet [paragraph 0023]. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a more robust media sensor that detects printed patterns as well as media positioning. One would have been motivated to modify Otsuki to improve the sensor versatility and efficiency as taught by Campbell et al.

32. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki et al. (US Patent 6,527,360) in view of Campbell et al. (US 2004/0119769).

33. Otsuki et al. meets the claimed limitations as set forth above except “wherein upon a beginning of the media passing under the mechanism relative to the second axis, the mechanism moves back and forth over the media along the first axis for the media-positioning sensor to detect a pattern imprinted on the media.”

34. Campbell et al. discloses a media sensor mounted on the printhead carrier that moves back and forth and is used to scan a pattern printed on the print media sheet [paragraph 0023; figure 1]. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a more robust media sensor that detects printed patterns as well as media positioning while moving back and forth over the media. One

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would have been motivated to modify Kato to improve the sensor versatility and efficiency as taught by Campbell et al.

35. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (US 2004/0108474) in view of Campbell et al. (US 2004/0119769).

36. Kato meets the claimed limitations as set forth above except “the media-advance mechanism moves along the first axis for the media-positioning sensor to detect a pattern imprinted on the media.”

37. Campbell et al. discloses a media sensor mounted on the printhead carrier used to scan a pattern printed on the on print media sheet [paragraph 0023]. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a more robust media sensor that detects printed patterns as well as media positioning. One would have been motivated to modify Kato to improve the sensor versatility and efficiency as taught by Campbell et al.

### ***Allowable Subject Matter***

38. Claims 6, 12, 19, 25, 30, 36, and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

39. The following is a statement of reasons for the indication of allowable subject matter:

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40. Prior art does not disclose or suggest the claimed "media-positioning sensor having a first sub-sensor remaining over the media when the mechanism is at the first end position and a second sub-sensor remaining over the media when the mechanism is at the second end position [claim 6 and 25]."

41. Prior art does not disclose or suggest the claimed mechanism that "moves substantially to a center of the media with respect to the first axis [claim 12, 19 and 30]."

42. Prior art does not disclose or suggest the claimed method that captures a plurality of images of the media with the media-positioning sensor as the mechanism moves over the media in the first direction and compares at least two of the plurality of images captured to determine positioning of the media relative to the mechanism in the first direction [claim 36 and 37].

### ***Response to Arguments***


43. Applicant's arguments with respect to claims 1-5, 7-11, 13-18, 20-24, 26-29 and 31-35 have been considered but are moot in view of the new ground(s) of rejection.

44. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jannelle M. Lebron whose telephone number is (571) 272-2729. The examiner can normally be reached on Monday thru Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JML  
04/05/06

  
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